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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/576,012

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Koji Sugiura

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EXAMINER

KARPINSKI, LUKE E

ART UNIT

PAPER NUMBER

1616

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/576,012	Applicant(s) SUGIURA ET AL.	
	Examiner LUKE E. KARPINSKI	Art Unit 1616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 January 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>4/17/2006, 11/01/2007</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claims 1-9 are pending in this action.

Claims 1-9 are under consideration in this action.

Election Requirement

Applicant's election with traverse of the SARS virus for species I and silver zirconium phosphate for species II in the reply filed on 1/31/2008 is acknowledged. The traversal is on the ground(s) that European and International search reports have been submitted and that International searchers searched claims 1-7 together. This is not found persuasive because there was no restriction requirement so all claims will be searched together. Also, the fact that previous search reports have been submitted does not mean that the US Examiner does not have to do a complete search of their own. The Applicant has not addressed any arguments pertaining to the election requirement, therefore the election requirement is deemed proper and stands.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 8 and 9 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. Claims 8 and 9 claim a method for

Art Unit: 1616

inactivating a coronavirus comprising using the anti-coronaviral agent of claim 1 but there is not one single step to demonstrate how the virus is to be inactivated or how the agent is to be used. For the purpose of conducting a complete examination the step of "using" will be interpreted by the examiner as "applying".

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 6 and 7 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for products such as paint, cloth, paper, and plastics, does not reasonably provide enablement for any product. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make the invention commensurate in scope with these claims. The applicant claims any product comprising the anti-coronaviral agent.

Enablement is considered in the view of the Wands factors (MPEP 2164.01 (a)). These include the nature of the claims, breadth of claims, guidance of the specification, the existence of working examples, predictability of the prior art, and the state of the prior art. All of the Wands factors have been considered with regard to the instant claims, with the most relevant discussed below.

1. **Nature of the invention:** The claims are drawn to any product comprising the anti-coronaviral agent of claim 1.

2. **Breadth of the claims:** The claims are broad in that the claims encompass incorporation of the anti-coronaviral agent into any product.
3. **Guidance of the Specification:** The guidance provided by the specification reasonably demonstrates that the instant anti-coronaviral agent may be incorporated into cloth, paper, paint and plastics. However, the claim also encompasses incorporation of said agent into any product; the specification does not provide actual guidance or evidence supporting such a scope.
4. **Working Examples:** All of the working examples of products comprising said anti-coronaviral agent are drawn to cloth, paper, plastics, and paint. There are no other examples of products which may incorporate said agent.

Therefore, the broadness of the claims combined with the minimal guidance from the specification, the state of the art, and the lack of working examples, provides for undue experimentation to practice the scope of the instant claims.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-7 are rejected under 35 U.S.C. 102(b) as being anticipated by US Patent No. 6,187,456 to Lever as evidenced by “Viral Pathogens and Severe Acute Respiratory Syndrome: Oligodynamic Ag+ for Direct Immune Intervention” by Rentz.

Lever discloses an antimicrobial agent which comprises a silver ion carrier, specifically silver zirconium phosphate (col. 3, lines 6-8). The antimicrobial effects of the compound disclosed in Lever will also necessarily have anti-coronaviral, specifically anti-SARS effects as evidenced by Rentz (page 114, lines 3-16).

Lever also discloses silver zirconium phosphate incorporated into a product (col. 3, lines 15-19 and col. 4, example 3).

Thus claims 1-7 are deemed anticipated by Lever as evidenced by Rentz.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Applicant Claims
2. Determining the scope and contents of the prior art.
3. Ascertaining the differences between the prior art and the claims at issue, and resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of

Art Unit: 1616

the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

1. Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent no. 6,1887,456 to Lever in view of "Viral Pathogens and Severe Acute Respiratory Syndrome: Oligodynamic Ag+ for Direct Immune Intervention" by Rentz.

Applicant Claims

Applicant claims a method for inactivating a coronavirus which comprises using the anti-coronaviral agent of claim 1. The applicant further claims the coronavirus is the SARS virus.

Determination of the Scope and Content of the Prior Art (MPEP §2141.01)

Lever teaches an anti-microbial agent (col. 3, lines 6-8) as claimed in claims 8 and 9.

Ascertainment of the Difference between Scope the Prior Art and the Claims (MPEP §2141.012)

1. Lever does not teach the inactivation of a coronavirus or SARS through contact with the anti-coronaviral agent as claimed in claims 8 and 9. This deficiency in Lever is cured by Rentz. Rentz teaches inactivation of bacteria through contact with Ag+ and that viral organisms may have the same susceptibilities (page 110, lines 31-38).

Finding of Prima Facie Obviousness Rational and Motivation
(MPEP §2142-2143)

1. Regarding claims 8 and 9, it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to inactivate a coronavirus through contact with an anti-coronaviral agent, as taught by Rentz in order to produce the invention of instant claims 8 and 9.

One of ordinary skill in the art would have been motivated to do this because Rentz teaches that in order for Ag+ to inactivate a virus it must contact said viral cell so that it may arrest life-essential reactions within said cell. Therefore it would have been obvious to contact the anti-coronaviral agent of Lever with the virus, as taught by Rentz in order to produce the methods of claims 8 and 9.

From the teachings of the reference, it is apparent that one of ordinary skill in the art would have had a reasonable expectation of success in producing the claimed invention. Therefore, the invention as a whole would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made, as evidenced by the references, especially in the absence of evidence to the contrary.

Thus instant claims 8 and 9 are deemed to be obvious by Lever in view of Rentz.

Conclusion

Claims 1-9 are rejected.

No claims are allowed.

Inquiries

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LUKE E. KARPINSKI whose telephone number is (571)270-3501. The examiner can normally be reached on Monday Thursday 9-4 est.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Johann R. Richter can be reached on 571-272-0646. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1616

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

LEK

/Mina Haghighatian/

Primary Examiner

Art Unit 1616